

**BEFORE THE
PUBLIC SERVICE COMMISSION OF
SOUTH CAROLINA**

**DOCKET NO. 2020-__-E
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In the Matter of:)
)
Duke Energy Carolinas, LLC's)
Establishment of Solar Choice Metering)
Tariffs Pursuant to S.C. Code Ann. Section)
58-40-20)
)
Duke Energy Progress, LLC's)
Establishment of Solar Choice Metering)
Tariffs Pursuant to S.C. Code Ann. Section)
58-40-20)

**DIRECT TESTIMONY OF
GEORGE V. BROWN FOR DUKE
ENERGY CAROLINAS, LLC AND
DUKE ENERGY PROGRESS, LLC**

I. INTRODUCTION AND SUMMARY

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is George V. Brown, and my business address is 400 South Tryon Street, Charlotte, North Carolina 28202.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. I am the General Manager of Strategy, Policy, and Strategic Investment for Distributed Energy Technology in the Enterprise Strategy and Planning group at Duke Energy Corporation ("Duke Energy").

Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND PROFESSIONAL EXPERIENCE.

A. I received a Bachelor of Arts in Economics at Harvard College and a Masters in Business Administration at New York University. I have been employed by Duke Energy since 1998 in a variety of Finance and Strategy roles. In my current role, I am responsible for the development and execution of business strategy and policy support related to distributed energy technology and renewable energy for Duke Energy's retail franchised utilities, including Duke Energy Carolinas, LLC ("DEC") and Duke Energy Progress, LLC ("DEP") (DEP and DEC are together referred to as the "Companies"). This includes evaluation of legislation and regulation, such as S.C. Act No. 62 of 2019 ("Act 62"), and implementation of customer programs such as those associated with S.C. Act No. 236 of 2014 ("Act 236").

1 **Q. HAVE YOU TESTIFIED BEFORE THE PUBLIC SERVICE COMMISSION**
2 **OF SOUTH CAROLINA (THE “COMMISSION”) IN ANY PRIOR**
3 **PROCEEDINGS?**

4 A. Yes, I have testified before the Commission on several occasions in the Companies’
5 fuel cases—most recently in Docket Nos. 2018-1-E—and in the Companies’
6 avoided costs cases in Docket Nos. 2019-185-E and 2019-186-E. I will also
7 provide testimony to the Commission in the upcoming hearing¹ in Docket No.
8 2019-182-E—the generic docket established by the Commission pursuant to Act
9 62 (“Generic Docket”).

10 **Q. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY?**

11 A. The purpose of my direct testimony is to provide an overview of the requirements
12 for the Companies’ proposed solar choice metering riders and rate schedules (the
13 “Solar Choice Tariffs”) as spelled out in Act 62 and to explain how the Companies’
14 proposed tariffs comply with those requirements.

15 **Q. PLEASE SUMMARIZE YOUR TESTIMONY.**

16 A. Act 62 requires the Commission to approve tariffs for a new net energy metering
17 (“NEM”) program for the Companies’ South Carolina customers (the “Solar
18 Choice Program”) that are reasonable considering the costs and benefits of the Solar
19 Choice Program, for applications received for on premises solar interconnection on
20 or after June 1, 2021. Additionally, Act 62 requires that the Solar Choice Tariffs
21 enable solar choice customers to use customer generated energy behind the meter

¹ The hearing in this docket is scheduled to begin on November 17, 2020.

1 without penalty² and also eliminate “any cost shift or subsidization associated with
 2 net metering to the greatest extent practicable.”³ The Companies’ proposed Solar
 3 Choice Tariffs, which, for each Company, include two residential riders, one
 4 residential rate schedule, and one non-residential rider, comply with the
 5 requirements of Act 62.

6 **II. ACT 62’S REQUIREMENTS**

7 **Q. PLEASE PROVIDE AN OVERVIEW OF ACT 62 AS IT RELATES TO**
 8 **SOLAR CHOICE TARIFFS AND THE PURPOSE OF THIS**
 9 **PROCEEDING.**

10 A. On May 16, 2019, the Governor signed into law Act 62, which requires the
 11 Commission to review South Carolina’s current iteration of NEM and addresses
 12 the key policy objectives for the implementation of a new Solar Choice Program,
 13 which can be thought of as the “successor” to the Act 236 NEM framework. Act
 14 62 was intended to “build upon the successful deployment of solar generating
 15 capacity through Act 236 of 2014” as noted in South Carolina Code Ann. § 58-40-
 16 20(A)(1). Relevant to this proceeding, Act 62 amended South Carolina Code Ann.
 17 § 58-40-20, which now requires the Commission to approve tariffs for the Solar
 18 Choice Program that are reasonable considering the costs and benefits of the Solar
 19 Choice Program, for applications received for on premises solar interconnection on
 20 or after June 1, 2021.

² S.C. Code Ann. § 58-40-20(G)(2).

³ S.C. Code Ann. § 58-40-20(G)(1).

1 Act 62 requires that the Solar Choice Tariffs enable solar choice customers
 2 to use customer generated energy behind the meter without penalty⁴ and also
 3 eliminate “any cost shift or subsidization associated with net metering to the
 4 greatest extent practicable.”⁵

5 **Q. DO THE COMPANIES’ PROPOSED SOLAR CHOICE TARIFFS**
 6 **COMPLY WITH ACT 62?**

7 A. Yes, as described in more detail by the Companies' Witness Ford and the
 8 Companies' Witness Huber, the Solar Choice Tariffs comply with the requirements
 9 of Act 62 and reflect a settlement agreement regarding Solar Choice programs, the
 10 terms and conditions of which are set forth in the Stipulation filed simultaneously
 11 herewith (the “Stipulation”). This agreement was the result of a collaborative
 12 stakeholder process, as discussed by the Companies' Witness Ford, with an
 13 overarching goal of reaching consensus on Solar Choice Tariffs that comply with
 14 the provisions of Act 62, such as:

- 15 • Fairly allocating costs and benefits to eliminate cost-shift and
- 16 subsidization to the greatest extent practicable;
- 17 • Providing time-variant rate structures;
- 18 • Using metering information in applying the solar choice tariff rates that is
- 19 just and reasonable in light of the costs and benefits of the solar choice
- 20 metering program; and

⁴ S.C. Code Ann. § 58-40-20(G)(2).

⁵ S.C. Code Ann. § 58-40-20(G)(1).

- Providing additional mitigation measures to transition existing customer-generators from their current tariffs by providing them options for their future solar choice rates.

Q. PLEASE OUTLINE THE SOLAR CHOICE TARIFFS THE COMPANIES ARE PROPOSING IN THIS PROCEEDING.

A. Each of the Companies is seeking approval for two residential riders, one residential rate schedule, and one non-residential rider. While each of these are described in further detail later in my testimony, below is a brief description of the components of these offerings.

Residential Riders and Schedules:

1) The Companies' interim solar choice riders (the "Interim Riders") will be available for residential customers who apply for interconnection from June 1, 2021 through December 31, 2021. Residential customers will receive service under their existing rate tariff and an Interim Rider. The Interim Riders will be very similar to the currently approved NEM rider but will include monthly netting with net exports credited at avoided cost, non-bypassables charges, enrollment caps, and future service provisions.

2) The Companies' permanent solar choice riders (the "Permanent Riders") will be available for residential customers who apply for interconnection on or after January 1, 2022. Residential customers will receive service under the residential solar time of use ("TOU") rate schedule ("Residential Solar Rate Schedules") and the Permanent Riders (together with the Residential Solar Rate Schedules, the "Permanent Tariffs"). The Permanent Riders will be very similar to the currently

1 approved NEM rider but will include monthly netting within TOU periods with net
2 exports credited at avoided cost and a monthly minimum bill (“MMB”).

3 3) The Companies’ Residential Solar Rate Schedules will be available for
4 residential customers who apply for interconnection on or after January 1, 2022.
5 The Residential Solar Rate Schedules are the sole NEM tariffs offered to residential
6 customer-generators and include TOU rates with critical peak pricing (“CPP”), a
7 monthly grid access fee (“GAF”) for systems larger than 15 kilowatts (“kW”), and
8 non-bypassable charges.

9 Non-Residential Riders:

10 The Companies’ non-residential solar choice riders (the “Non-Residential Riders”)
11 will be available for non-residential customers who apply for interconnection on or
12 after June 1, 2021. Non-residential customers will receive service under their
13 existing rate schedule and a Non-Residential Rider, which will include monthly
14 netting with net exports credited at avoided cost.

15 **Q. WHY ARE THE COMPANIES PROPOSING THE INTERIM RIDERS?**

16 A. The Companies are in the process of implementing a new customer billing system,
17 Customer Connect, that will enable to the Companies to more efficiently and
18 effectively bill retail customers for electric service. As a part of the testing and
19 implementation of this new system, the Companies currently have a moratorium on
20 integrating new tariffs —especially those with more complex billing requirements
21 —until after testing is complete in order to ensure the systems are stable and
22 operating as designed. Once testing is complete, the Companies can integrate the
23 Permanent Tariffs into their billing system in January 2022. In order to bridge the

1 gap between when Act 62 requires Solar Choice Tariffs be implemented (June 1,
2 2021) and when the Companies' billing system can integrate the Permanent Tariffs
3 (January 1, 2022), the Companies proposed, and the settling parties agreed, to allow
4 residential customers to remain on their current rate schedule and offer the Interim
5 Riders from June 1, 2021 until December 31, 2021.

6 **Q. ARE THE COMPANIES UPGRADING CUSTOMER CONNECT SOLELY**
7 **TO IMPLEMENT THE SOLAR CHOICE PROGRAM UNDER ACT 62?**

8 A. No. The Customer Connect billing system project is independent of the Solar
9 Choice Program under Act 62. However, there will be some incremental billing
10 costs to implement the Solar Choice Tariffs. In accordance with Act 62, the
11 Companies will track the expenses related to the implementation of the Solar
12 Choice Programs and will defer those expenses until the next base rate case.

13 **III. SOLAR CHOICE TARIFFS**

14 **Q. PLEASE BRIEFLY DESCRIBE THE INTERIM RIDERS.**

15 A. The proposed Interim Riders are available for residential customers applying for
16 interconnection from June 1, 2021 through December 31, 2021. They are similar
17 to the Companies' current Residential NEM Riders in that customers are able to
18 stay on their existing rate schedules but with two important changes.

19 Under the current NEM Programs ("Existing NEM Programs"), customers
20 can net their excess generation not used at the premises against energy imported
21 during the same billing period and any net generation in excess of their total
22 consumption can be carried over to subsequent billing periods. These net exports
23 can be used as a kilowatt hour ("kWh") credit against the customer's energy charges

1 in subsequent billing periods. This feature enables customers to realize the full
2 retail rate for generation behind the meter and for their net exports. Under the
3 Interim Riders, the netting provisions will remain the same as in the Existing NEM
4 Programs, however instead of rolling over credits for net exports to a future billing
5 cycle, at the end of the billing period any net exports will be paid to the customer—
6 as a bill credit—at the avoided cost rate. The net exports, in kWh, will be multiplied
7 by the current Commission approved avoided cost rate.

8 There will also be a non-bypassable charge, based upon the capacity of the
9 solar facility, to recover energy efficiency program costs, cyber security costs,
10 storm cost recovery, and any other charges approved by the Commission that are
11 not directly related to the provision of service for that customer. This monthly
12 charge, which is proposed to be \$0.50 per kW DC for DEC and \$0.58 per kW DC
13 for DEP, will ensure that the residential customer pays its full share of such costs.
14 Under the Existing NEM Programs, these costs are recovered via a volumetric
15 energy charge, which results in under-collection. Since the solar production
16 reduces volumetric charges, current customer-generators can avoid paying these
17 costs because of their reduced energy charges.

18 Interim Rider customers can remain on an Interim Rider until May 31, 2029,
19 which aligns with the expiration date of full retail rate NEM for customers who
20 apply for NEM prior to June 1, 2021 under Act 62. At that time, the customer can
21 switch to a Permanent Tariff (with 30 days' notice to the Companies) or can chose
22 to remain on the Interim Rider. If they choose to remain on the Interim Rider, the
23 customer will be subject to a new monthly minimum bill that is \$10 more than the

1 Basic Facilities Charge (“BFC”). The minimum bill will be calculated based upon
2 collecting a minimum of only distribution and customer costs, which is consistent
3 with the Residential Solar Rate Schedule. Furthermore, all future base rate changes
4 that are avoided due to a reduction in the billed kWh’s based on the production of
5 solar will be collected via a non-bypassable charge rather than through the
6 applicable energy rate. This fixed charge per kW DC will then be assessed based
7 upon the solar system’s DC capacity. Any customer on the Interim Rider will have
8 the option to switch to the Permanent Tariffs any time after January 1, 2022.

9 **Q. ARE THERE ANY CAPACITY LIMITS GOVERNING THE INTERIM**
10 **RIDERS?**

11 A. Yes. The settling parties agree to a monthly residential application capacity limit
12 of 1.2 MW DC in aggregate for DEC and kW DC for DEP. This means the
13 Companies will accept a limited amount of applications each month. Once the
14 application limit is reached, customers who want to apply for the Interim Rider will
15 need to resubmit their application the next month. The application limit is based
16 on valid applications received and accepted whether those applications are
17 ultimately energized or not.

18 **Q. HOW LONG CAN THE CUSTOMERS REMAIN ON THE INTERIM**
19 **RIDERS?**

20 A. Residential customers on an Interim Rider are allowed to remain on their existing
21 rate schedule as long as they receive service from the Companies at the location
22 specified in the Interim Rider application submitted by that customer.
23

1 **Q. PLEASE SUMMARIZE THE PERMANENT TARIFFS.**

2 A. Each Company will offer a Permanent Tariff for residential customers, which
3 consists of a Residential Solar Rate Schedule and a Permanent Rider. While I
4 provide a summary of the Permanent Tariffs, the Companies' Witness Huber
5 describes these Permanent Tariffs in greater detail. The proposed Residential Solar
6 Rate Schedules will be the sole rate schedule available to residential customer-
7 generators. This rate schedule includes defined TOU and CPP rate pricing periods
8 that are based upon the Companies' loss of load probability study. As the
9 Companies' Witness Huber describes, the Permanent Tariffs include a GAF and a
10 MMB, all of which are designed to ensure customer generators pay for the cost to
11 serve them regardless of their generation. The Permanent Tariffs are available to
12 residential customers applying on or after January 1, 2022.

13 **Q. PLEASE SUMMARIZE THE NON-RESIDENTIAL RIDERS.**

14 A. Non-residential customer-generators applying for interconnection after June 1,
15 2021 will continue service under their current rate schedule but will be placed on a
16 Non-Residential Rider. The Non-Residential Riders mirror the options for non-
17 residential customers under the Existing NEM Programs, with only one
18 modification. As previously described, the netting of a customer's excess
19 generation will change. Under the Non-Residential Riders, the non-residential
20 customer will still receive the full retail rate for generation used behind the meter
21 but at the end of the billing period any net exports will be applied as a bill credit on
22 the next monthly bill. The net exports, in kWh, will be multiplied by the current
23 Commission approved avoided cost rate.

1 **Q. WILL THE COMPANIES CONTINUE TO SERVE CUSTOMERS UNDER**
2 **EXISTING NEM PROGRAMS ESTABLISHED PURSUANT TO ACT 236?**

3 A. Yes. Customers under the Existing NEM Programs can take service under their
4 current rate schedules and riders until December 31, 2025 for customer-generators
5 enrolling under Act 236 and May 31, 2029, for customer-generators enrolling under
6 Act 62.

7 **Q. WHAT HAPPENS TO THE RATES FOR EXISTING NEM CUSTOMERS**
8 **AT THEIR APPLICABLE SUNSET DATE?**

9 A. The Companies believe it is important to mitigate the adverse financial impact that
10 existing NEM customers would likely incur if they were required to move to the
11 Permanent Tariffs on their sunset dates. To that end, the Companies propose
12 providing existing residential NEM customers the option of moving to the
13 Permanent Tariffs or switching to a transition tariff for customers under the
14 Existing NEM Programs. These transition tariffs, which will be filed in advance of
15 the 2025 and 2029 sunset dates, will be the same as the existing NEM Rider with
16 the following modifications:

17 1) The Companies will move to a monthly excess energy netting arrangement
18 where the residential customer will be allowed to net the energy sent to the utility
19 against the energy supplied by the utility over the monthly billing period, which is
20 consistent with the Interim Rider. Any net exports will be applied as a bill credit
21 on the next monthly bill and calculated at the Companies' Commission approved
22 avoided cost rate.

1 2) All future base rate changes that are avoided due to a reduction in the billed
2 kWhs will be collected via a non-bypassable fixed charge per kW DC, which is
3 based upon the system capacity.

4 3) There will be a minimum bill charge that is \$10 more than the BFC. This
5 minimum bill will ensure a collection of the minimum customer and distribution
6 costs, inclusive of the BFC.

7 **Q. WILL THE VALUE OF SOLAR ("ACT 236 VOS") METHODOLOGY**
8 **UNDER THE SOLAR CHOICE TARIFFS DIFFER FROM THE**
9 **METHODOLOGY UTILIZED UNDER EXISTING NEM PROGRAMS?**

10 A. As I described in my Direct Testimony submitted in the Generic Docket, the
11 Companies believe that the Act 236 VOS is an appropriate valuation tool for the
12 energy produced by customer-generators in the Existing NEM Programs. The
13 Companies are not proposing modifications to the Act 236 VOS methodology for
14 Existing NEM Programs and will continue to use this methodology for cost
15 recovery in those programs.

16 In accordance with the Stipulation and Solar Choice Tariffs, solar choice
17 customers will receive credit for their net exports at the Companies' Commission
18 approved avoided cost rate. As such, the Act 236 VOS is not applicable to the Solar
19 Choice Tariffs.

20

1 **IV. COST-RECOVERY**

2 **Q. PLEASE EXPLAIN HOW THE COMPANIES ANTICIPATE**
3 **RECOVERING THE AVOIDED COSTS RELATED TO THE SOLAR**
4 **CHOICE TARIFFS.**

5 A. The Solar Choice Tariffs credit net exports at the avoided cost rate. As an NEM
6 avoided cost, the Companies believe this cost is appropriate for collection through
7 annual fuel proceedings, consistent with the historic treatment under Act 236.

8 **V. CONCLUSION**

9 **Q. PLEASE EXPLAIN THE COMPANIES' PLAN TO EDUCATE**
10 **POTENTIAL SOLAR CHOICE CUSTOMERS ABOUT THE SOLAR**
11 **CHOICE PROGRAMS.**

12 A. The Companies understand the importance of customer education when there are
13 program or tariff modifications. Considering NEM customers are also engaging
14 with third party installers, the Companies will work with interested stakeholders to
15 develop customer education tools and resources that will be available in advance of
16 any NEM program changes.

17 **Q. DOES THIS CONCLUDE YOUR PREFILED DIRECT TESTIMONY?**

18 A. Yes, it does.